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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/951,201	10/14/97	WOODARD	W 33470US

IM52/0607  
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EXAMINER

DOROSHENK, A

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 06/07/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application No.  
**08/951,201**

Applicant(s)  
**Woodard et al**

Examiner  
**Alexa Doroshenk**

Group Art Unit  
**1764**



☒ Responsive to communication(s) filed on Feb 1, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

**Disposition of Claims**

☒ Claim(s) 1-11 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-11 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

**Application Papers**

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Oct 14, 1997 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4 and 6

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "effluent line 30" (page 13, line 20). Correction is required.

### *Specification*

#### 2. **Content of Specification**

- (a) Title of the Invention: See 37 CFR 1.72(a). The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive, preferably from two to seven words.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Reference to a "Microfiche Appendix": See 37CFR 1.96© and MPEP § 608.05. The total number of microfiche and the total number frames should be specified.
- (e) Background of the Invention: The specification should set forth the Background of the Invention in two parts:
  - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

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- (2) Description of the Related Art: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. This item may also be titled "Best Mode for Carrying Out the Invention." Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (I) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet. (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps.

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- (j) Abstract of the Disclosure: A brief narrative of the disclosure as a whole in a single paragraph of 250 words or less on a separate sheet following the claims.
- (k) Drawings: See 37 CFR 1.81, 1.83-1.85, and MPEP § 608.02.
- (l) Sequence Listing: See 37 CFR 1.821-1.825.

3. The applicant is asked to include a brief description of drawings as set forth in 37 CFR 1.74.

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 1, 2, and 5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The

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omitted structural cooperative relationships are: "at least one separator" of claim 1, "filters" of claim 2, and "separator inlet line" of claim 5.

Regarding claim 3, the phrase "following" renders the claim vague and indefinite because the structural relationship is unclear

With respect to claims 7-11 are unclear as to what structural relationships are being claimed as the claims 7-11 are directed to method limitations.

The term "desired" in claims 9-11 is a relative term which renders the claim indefinite. The term "desired" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-2, 4-5, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Harandi et al (4,788,366).

With respect to claim 1, Harandi et al disclose an apparatus comprising:

a reactor (col. 3, lines 48-51 and reference number 20);

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an inlet line into reactor (col. 3, lines 48-51 and reference number 11);  
effluent line from reactor (col. 3, lines 53-61 and reference number 22); and  
separator (col. 4, lines 38-41 and reference number 26).

The "chromium source", "pyrrole-containing compound" and "metal alkyl" of instant claim 1 do not structurally limit the claim and there read on the apparatus of Harandi et al.

With respect to claim 2, Harandi et al disclose the use of filters (col. 7, lines 64-66).

With respect to claim 4, Harandi et al disclose a reactor inlet from a second source (col. 3, lines 51-52 and reference number 21).

With respect to claim 5, Harandi et al disclose a separator inlet line for a stream of heavies to be separated (col. 4, lines 37-54 and figure 1).

With respect to claims 7-11, these claims do not include structural limitations and therefor read on the apparatus of Harandi et al.

Instant claims 1-2, 4-5, and 7-11 structurally read on the apparatus of Harandi et al.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harandi et al in view of Lashier et al (5,689,028).

Harandi et al disclose all of the claimed structure except for an inlet for catalyst system deactivator. Lashier et al disclose a process to regulate olefin production in which a catalyst comprising a chromium source, a pyrrole-containing compound and a metal alkyl (col. 1, lines 55-59) is deactivated in the reactor effluent stream (col. 5, line 65- col. 6, line 21). Lashier et al disclose that the reaction products can be prepared from a conventional gas phase catalyst system (col. 4, line 65- col. 5, line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an inlet for catalyst deactivator into the effluent stream of Harandi et al's gas phase catalyst system in order to regulate the production of olefin during trimerization.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harandi et al in view of Mehra et al (5,521,264).

Harandi et al disclose all of the claimed apparatus, including heavies removal, but is silent as to a reactor inlet line for solvent. Mehra et al disclose an apparatus similar to that of Harandi et al including a separator, a reactor, filters, and a solvent inlet line (col. 13, lines 61-65 and reference number 98). Mehra et al teaches the use of a solvent to absorb ethylene, higher alpha olefin comonomers, and heavier hydrocarbons (col. 13, lines 61-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a solvent inlet in



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the apparatus of Harandi et al to incorporate the teaching of Mehra et al and further remove heavies during operation.

*Conclusion*

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Alexa Doroshenk, whose telephone number is (703) 305-0074. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

AAD

May 24, 1999

*Hien Tran*  
**HIEN TRAN**  
**PRIMARY EXAMINER**